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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/810,333	03/14/2001	Behrang Bchin	ONX-107A	6692

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EXAMINER

TAMAI, KARL I

ART UNIT	PAPER NUMBER
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2834

DATE MAILED: 09/04/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/810,333

Applicant(s)

BEHIN ET AL.

Examiner

Tamai IE Karl

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 12-28 and 33-37 is/are rejected.
- 7) ☒ Claim(s) 7-11 and 29-32 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____
- 4) ☐ Interview Summary (PTO-413) Paper No(s) ____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Specification

2. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1-3 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nakagawa et al. ('981)(JP 07-015,981) or Nakagawa et al. ('186)(JP 05-076,186). Nakagawa ('186) teaches an interdigital vertical comb actuator with the second comb

having electrically isolated conductive layers 21a, b which are separated by an insulating dielectric layer 21c or an air gap (fig. 4).

5. Claims 1-2, 4-6, 12, 14, 17, and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Nakagawa et al. ('318)(JP 4-343318). Nakagawa ('318) teaches an interdigital vertical comb actuator with the second comb having electrically isolated conductive layers 12, 13 which are separated by an insulating dielectric layer 11. The first comb having first and second conductors substantially aligned with the conductors of the second comb. The Application of a voltage between the combs causes the second comb to rotate on a flexure attached to the substrate.

6. Claims 1-4, 17, and 18 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Yamada et al. (Yamada)(US 5959760). Yamada teaches an interdigital rotational comb actuator with the first comb having electrically isolated conductive layers 7a, 7a' which are separated by an insulating layer 6 and an air gap, where the second comb structure is a rotatable element fixed to the substrate by a flexure.

7. Claims 1, 2, 4-6, 12, 13, 14, and 17 are rejected under 35 U.S.C. 102(b) as being clearly anticipated by Xie et al. (Xie) ("A CMOS Z-Axis Capacitive Accelerometer with Comb Finger Sensing"). Xie teaches an interdigital vertical comb sensor with the first combs (stationary) having electrically isolated conductive layers (see figure 6) which are separated by an insulating layer. Xie teaches the second comb structure having

electrodes aligned with the electrodes of the first comb. Xie teaches the comb structure can be used as an actuator. In regards to claim 13, the method of making the limitations are not germane to the patentability of the apparatus. Xie teaches springs attached to the z combs which inherently allows for rotation of the second member.

Claim Rejections - 35 USC § 103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

10. Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xie et al. (Xie) in further view of Lemkin et al. (Lemkin)(US 6253612). Xie teaches every aspect of the invention except measuring the capacitance between the moving

and stationary electrodes for feedback control. Lemkin teaches that feedback control using the driving electrodes (col. 5, page 23) as sensors provides an actuator with stability control of the mover. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the mover of Xie with the capacitance sensed by the electrodes to provide stable control of the mover.

11. Claims 19-28 and 33-35 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xie et al. (Xie) in further view of Yamada et al. (Yamada)(US 5959760). Xie teaches every aspect of the invention except third and fourth comb electrodes secured to a frame of the second comb and the first and second layers separated by an air gap. Yamada teach in figure 12 a rotatable third and fourth combs secured to the frame of the second comb. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the mover of Xie with the rotatable flexure of Yamada to allow the actuator to rotate a mirror as taught by Yamada.

12. Claims 36 and 37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Xie et al. (Xie) and Yamada et al. (Yamada)(US 5959760), in further view of Lemkin et al. (Lemkin)(US 6253612). Xie and Yamada teach every aspect of the invention except measuring the capacitance between the moving and stationary electrodes for feedback control. Lemkin teaches that feedback control using the driving electrodes (col. 5, page 23) as sensors provides an actuator with stability control of the

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mover. It would have been obvious to a person of ordinary skill in the art at the time of the invention to construct the mover of Xie and Yamada with the capacitance sensed by the electrodes to provide stable control of the mover.

Allowable Subject Matter

13. Claims 7-11 and 29-32 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karl I.E. Tamai whose telephone number is (703) 305-7066.

The examiner can be normally contacted on Monday through Friday from 8:00 am to 4:00 pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Nestor Ramirez, can be reached at (703) 308-1371. The facsimile number for the Group is (703) 305-3432.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Group receptionist whose telephone number is (703) 308-0956.

Karl I Tamai
PRIMARY PATENT EXAMINER
September 1, 2003



KARL TAMAI
PRIMARY EXAMINER
KARL TAMAI
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